

Title (en)

Multi-component hybrid turbine blade

Title (de)

Hybride Mehrkomponententurbinenschaufel

Title (fr)

Aube hybride pour turbines à gaz composée de plusieurs composants

Publication

EP 1462606 B1 20080123 (EN)

Application

EP 03251933 A 20030327

Priority

- EP 03251933 A 20030327
- CA 2422827 A 20030320
- JP 2003076722 A 20030320
- US 4023802 A 20020108

Abstract (en)

[origin: US2003129061A1] A multi-component hybrid turbine blade comprises a shank portion and an airfoil portion. The airfoil portion comprises a composite section having a first density. The composite section comprises a recess and an insert section. The insert section has a second mass density, which is less than the first mass density. The insert section is disposed in the recess, and the insert section is bonded to the composite section. The composite section and the insert section together define an airfoil shape. A fabrication method comprising laying up composite material layers to form a portion of the composite section. The portion of the composite section comprises a recess. Disposing the insert section in the recess. Laying up additional composite material layers to achieve a final desired thickness of the composite section while covering the insert section.

IPC 8 full level

B23P 15/04 (2006.01); **B29C 70/34** (2006.01); **B29C 70/86** (2006.01); **B29D 31/00** (2006.01); **B29D 99/00** (2010.01); **F01D 5/14** (2006.01); **F01D 5/18** (2006.01); **F01D 5/28** (2006.01); **F02C 7/00** (2006.01)

CPC (source: EP US)

B23P 15/04 (2013.01 - EP US); **B29C 70/345** (2013.01 - EP US); **B29C 70/865** (2013.01 - EP US); **B29D 99/0025** (2013.01 - EP US); **F01D 5/147** (2013.01 - EP US); **F01D 5/28** (2013.01 - EP US); **F01D 5/282** (2013.01 - EP US); **B29L 2031/08** (2013.01 - EP US); **F05D 2300/2102** (2013.01 - EP US); **F05D 2300/224** (2013.01 - EP US); **F05D 2300/431** (2013.01 - EP US); **F05D 2300/50** (2013.01 - EP US); **F05D 2300/603** (2013.01 - EP US); **Y02T 50/60** (2013.01 - EP US)

Cited by

EP1788197A1; US8979500B2; WO2007057294A1; WO2019166244A1; EP2322427B2; EP2971528B1; EP2971528B2

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

US 2003129061 A1 20030710; **US 6607358 B2 20030819**; CA 2422827 A1 20040920; CA 2422827 C 20100216; EP 1462606 A1 20040929; EP 1462606 B1 20080123; JP 2004285864 A 20041014; JP 4406212 B2 20100127

DOCDB simple family (application)

US 4023802 A 20020108; CA 2422827 A 20030320; EP 03251933 A 20030327; JP 2003076722 A 20030320